

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Claims 1-4 (Cancelled)

Claim 5 (Currently Amended) An electrophoretic apparatus comprising:

an electrophoretic member in which a plate-shaped member thereof has one or a plurality of passages formed therein and also such holes reaching the passage that are formed at positions corresponding to both ends of the passage on one surface of the plate-shaped member, each of the passages comprising a specimen-injection-passage and a separation-passage which intersect with each other;

a voltage applying part for applying a voltage across the passage ~~of the electrophoretic member;~~

a detecting part for detecting a specimen present in the ~~passage of the electrophoretic member~~ separation passage; and

a specimen-injection monitor mechanism provided with CCD for detecting a specimen at a site where a specimen is injected into the ~~passage~~ specimen-injection-passage, the specimen-injection monitor mechanism being installed separately from the detecting part,

wherein the specimen-injection monitor mechanism detects a specimen distribution along the specimen-injection-passage including at least the intersection between the specimen-injection-passage and the separation-passage,

wherein the detecting part ~~consists of~~ comprises a fluorescent-light detecting device for detecting a fluorescent light in a detection range, the fluorescent-light detecting device comprising:

a first optical system for focusing, for image formation, a light from the detecting range into a slit hole; and

a second optical system provided with a reflection-type diffraction grating, for separating a light from the slit hole and focusing the light, for image formation, onto a detecting element,

wherein the specimen-injection monitor mechanism and the detecting mechanism are each provided with a fluorescent-light detecting optical system, which shares a common excitation light source in use.

Claim 6 (Cancelled)

Claim 7 (Currently Amended): ~~The electrophoretic apparatus according to claim 5,~~

An electrophoretic apparatus comprising:

an electrophoretic member in which a plate-shaped member thereof has one or a

plurality of passages formed therein and also such holes reaching the passage that are formed at positions corresponding to both ends of the passage on one surface of the plate-shaped member, each of the passages comprising a specimen-injection-passage and a separation-passage which intersect with each other;

a voltage applying part for applying a voltage across the passage;

a detecting part for detecting a specimen present in the separation-passage; and

a specimen-injection monitor mechanism provided with CCD for detecting a specimen at a site where a specimen is injected into the specimen-injection-passage, the specimen-injection monitor mechanism being installed separately from the detecting part,

wherein the specimen-injection monitor mechanism detects a specimen distribution along the specimen-injection-passage including at least the intersection between the specimen-injection-passage and the separation-passage,

wherein the detecting part comprises a fluorescent-light detecting device for detecting a fluorescent light in a detection range, the fluorescent-light detecting device comprising:

a first optical system for focusing, for image formation, a light from the detecting range into a slit hole; and

a second optical system provided with a reflection-type diffraction grating, for separating a light from the slit hole and focusing the light, for image formation, onto a detecting element,

wherein the specimen-injection monitor mechanism is provided with a detecting optical system having an LED as a light source thereof.

Claim 8 (Currently Amended): The electrophoretic apparatus according to claim 5, wherein:

~~the electrophoretic member comprising a specimen injection passage and a separation passage which intersect with each other; and~~

the apparatus further comprises a control part which (a) causes the voltage applying part to supply a voltage for guiding a specimen to an intersection between the specimen injection passage and the separation passage, and (b) stops the voltage application to the passages upon the specimen-injection monitor mechanism detecting a non-uniform specimen distribution in a predetermined area after a predetermined time has elapsed.

Claim 9 (Currently Amended) The electrophoretic apparatus according to claim 5, wherein:

~~the electrophoretic member comprising a specimen injection passage and a separation passage which intersect with each other; and~~

the apparatus further comprises a control part which stops voltage application to said passages upon the specimen-injection monitor mechanism detecting a specimen present at

said interest as a result of the voltage applying part failing to electrophoretically migrate the specimen into the separation passage.

Claim 10 (Currently Amended): An electrophoretic apparatus comprising:

an electrophoretic member in which a plate-shaped member thereof has one or a plurality of passages formed therein and also such holes reaching the passage that are formed at positions corresponding to both ends of the passage on one surface of the plate-shaped member;

a voltage applying part for applying a voltage across the passage of the electrophoretic member;

a detecting part for detecting a specimen present in the passage of the electrophoretic member;

an electrophoretic-medium filling mechanism for filling an electrophoretic medium into the passages through reservoirs of the electrophoretic member and a specimen injection mechanism for injecting a specimen into one of the reservoirs;

an electrophoretic-medium sucking mechanism for removing an electrophoretic medium contained in the reservoirs;

a buffer-liquid injecting mechanism for injecting a buffer liquid into the all reservoirs of one electrophoretic member simultaneously for mitigating an influence of a water head difference after the electrophoretic medium is removed therefrom; and

a control part for controlling the electrophoretic apparatus including the mechanisms so that they all may operate automatically.

Claim 11 (Cancelled)

Claim 12 (Original): The electrophoretic apparatus according to claim 10, further comprising a specimen sucking mechanism for removing a specimen left in the reservoirs after the specimen is injected into the passages, wherein

the control part controls the specimen sucking mechanism as well so that it may operate automatically.

Claim 13 (New): The electrophoretic apparatus according to claim 7, wherein:

the apparatus further comprises a control part which (a) causes the voltage applying part to supply a voltage for guiding a specimen to an intersection between the specimen injection passage and the separation passage, and (b) stops the voltage application to the passages upon the specimen-injection monitor mechanism detecting a non-uniform specimen distribution in a predetermined area after a predetermined time has elapsed.

Claim 14 (New) The electrophoretic apparatus according to claim 7, wherein:

the apparatus further comprises a control part which stops voltage application to said

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passages upon the specimen-injection monitor mechanism detecting a specimen present at said interest as a result of the voltage applying part failing to electrophoretically migrate the specimen into the separation passage.